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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
'09/631,067	08/01/2000	Hajime Kimura	SEL 201	6613
7590 05/17/2005			EXAMINER .	
Cook Alex McFarron Manzo Cummings & Mehler LTD Suite 2850 200 West Adams Street Chicago, IL 60606			NEGRON, ISMAEL	
			ART UNIT	PAPER NUMBER
			2875	
DATE MAILED: 05/17/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

09/631,067

Applicant(s)

KIMURA, HAJIME

Examiner

Ismael Negron

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-27 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/7/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on March 7, 2005 has been entered. Claims 1, 8 and 9 have been amended. No claim has been added or cancelled. Claims 1-27 are still pending in this application, with claims 1, 2, 5, 8-11, 14 and 15 being independent.

Title

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **Front Light having a Plurality of Prism-Shaped Lenses.**

Abstract

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should

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include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

3. The abstract of the disclosure is objected to because it fails to concisely state the subject matter of the invention, is not directed to the entire disclosure, refers to the

purported merits of the claimed invention and exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “5” has been used to designate both “*reflective LCD*” (page 2, line 12) and “*liquid crystal panel*” (page 3, line 5). In addition, note the following:

- reference character “1b”, used to designate “*side surface*” (page 2, line 20) and “*lower surface*” (page 5, line 12); and
- reference character “700”, used to designate “*sensor*” (page 45, line 15) and “*adhesive type sensor*” (page 45, line 22).

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “106” has been used to designate different parts in different embodiments. See Figures 1A, 3A, 3B AND 3C.

6. The applicant is advised that the reference characters must be properly applied, with no single reference character being used for two different parts or for a given part and a modification of such part. See MPEP §608.01(g). Correction is required.

Applicant is further advised that this action only exemplifies the objections to the drawings, applicant's cooperation is requested in correcting all the occurrences of the cited, or any other errors of which applicant may become aware in the specification.

7. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

8. The disclosure is objected to because of the following informalities:

- The specification make reference to Figure 6 in page 16 (line 21), however, no such figure is included in the drawings. The Examiner suggests amending line 21 to read "~~Fig. 6 illustrates~~ **Figs. 6A-6D** illustrate a configuration of the front light in".
- The refractive index of the light guide plate is disclosed as being $2^{1/2}$ (approximately 1.414) or larger in line 9 of page 19, with the

preferred range of 1.4 to 1.7 being outside of the previously cited range. The Examiner suggests amending line 19 to read "*and the refractive index of about $2^{1/2}$ or larger. With a refractive index*".

Line 4 of page 38 should be amended to read "*are made of the same material, of ~~course~~ course. As shown in Fig. 8B, each*".

Appropriate correction is required.

Allowable Subject Matter

9. Claims 1-27 are allowed.

10. The following is an examiner's statement of reasons for allowance:

Applicant teaches an front illumination source for reflective LCD and optical sensor for reading objects, such source having a light source, a light guide plate and a prism plate in direct contact with the lower surface of the light guide plate. The prism plate includes a plurality of prism-shaped lenses having an equally-sided trapezoid cross section. The obtuse internal angle of the lenses being more than 90°, but less than the sum of 90° and the critical angle of the lens.

A second embodiment is disclosed featuring a plurality of axially-symmetric prism-shaped lenses having side surfaces formed by opposing curved lines in a cylindrical or rotational manner. The curved lines are defined such that the angle formed by a line normal to a point on one curve line and the line defined by such point and the

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intersection point of the minor base of the lens and the opposing curve line, is within 3° of the critical angle for the lens.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically an equally-sided trapezoid prism lens having an obtuse internal angle of more than 90° , but less than the sum of 90° and the critical angle of the lens, or the sides of the lens being curved lines with the angle formed by a line normal to a point on one curved line and the line defined by such point and the intersection point of the minor base of the lens and the opposing curve line, is within 3° of the critical angle for the lens, in combination with the claimed front light structure.

Beeson et al. (U.S. Pat. 5,396,350) discloses a transmissive LCD back illumination source, such source having a light source, a light guide plate and a prism plate in direct contact with the upper surface of the light guide plate. The prism plate includes a plurality of prism-shaped lenses having an equally-sided trapezoid cross section. The obtuse internal angle of the lenses being more than 90° , but less than the sum of 90° and the critical angle of the lens. However, Beeson et al. features a transmissive LCD. No motivation was found to combine the back illumination source of Beeson et al. with a reflective LCD as claimed in the instant application.

11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Ex parte Quayle

12. This application is in condition for allowance except for the formal matters detailed in sections 2-8 of the instant Office Action.

13. Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (571) 272-2378. The facsimile machine number for the Art Group is (703) 872-9306.

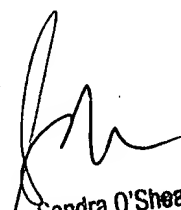
15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications maybe obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.


Inr

May 12, 2005


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800